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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/828,971

04/21/2004

Charles L. Gray JR.

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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC

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EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT

PAPER NUMBER

3746

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/828,971	<b>Applicant(s)</b> GRAY, CHARLES L.	
	<b>Examiner</b> PETER J. BERTHEAUD	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10, 11, 13-20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 7, 19, 20 and 24 is/are allowed.
- 6) ☒ Claim(s) 3, 4, 6, 8, 10, 11, 15-18 and 23 is/are rejected.
- 7) ☒ Claim(s) 5, 13, 14 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/9/2008 has been entered. It should be noted that claims 1, 3, 6, 8, 10, 15, 16, and 18 have been amended and claims 22-24 have been added.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites the limitation "the first cylinder" in line 8. There is insufficient antecedent basis for this limitation in the claim. Previously in the claim the portion of the back plate is defined as being shaped like "a section of a first cylinder" not actually being a cylinder. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Wahlmark 3,233,555.

Wahlmark discloses a variable displacement fluid device comprising: a back plate 26 having a concave surface (see 26 in Fig. 2) in whose shape defines a section of a first cylinder, the back plate 26 being configured to slideably receive a convex valve plate 62 thereon; first and second fluid ports 12, 13 formed in the concave surface and configured to transmit differentially pressurized fluid to the valve plate 62; first and second reaction plates 70 coupled to the back plate 26, each having a convex reaction surface (see upper portion of channel 64) whose shape and position defines a respective section of a second cylinder, concentric to the first cylinder, the reaction surfaces of the first and second reaction plates substantially facing, and spaced a selected distance from, the concave surface of the back plate 26.

In addition, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function, because apparatus claims cover what a device is, not what a device does (*Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990)). Thus, if a prior art structure is capable of performing the intended use as recited in the preamble, or elsewhere in a claim, then it meets the claim.

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***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 4, 6, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wahlmark 3,233,555 in view of Forster 4,893,549.

Wahlmark discloses a variable displacement fluid device comprising a back plate 26 having first and second fluid ports 12, 13 configured to be differentially pressurized; a plurality of reaction plates 70 rigidly coupled to the back plate 26; a valve plate 62 slideably coupled to the back plate 26 and having first and second fluid feed channels 80, 81 configured to receive fluid from the first and second fluid ports 12,13, and a surface configured to receive a rotatable cylinder barrel (see col. 6, lines 27-29); and a plurality of hold-down ball bearings 63 positioned in respective hold-down sockets 67 formed in the valve plate 62, each of the hold-down ball bearings 63 configured to be biased, by pressurized fluid in the respective hold-down socket, against a surface 64 of one of the reaction plates 70 (see col. 6, lines 1-19). Wahlmark also discloses a barrel 12, rotatably coupled to the valve plate 62 and having a plurality of drive cylinders 53 formed therein; a plurality of drive pistons 52, each having a first end positioned in a respective one of the plurality of drive cylinders 53; and a thrust plate 140 having a surface configured to receive second ends of each of the plurality of drive pistons 52, the thrust plate 140 coupled to a drive shaft 11 of the pump/motor. Wahlmark further

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discloses that each of the hold-down ball bearings 63 comprises a face conforms to the surface of the respective reaction plate 70.

Wahlmark discloses the claimed invention except for the hold-down ball bearings within sockets being hold-down pistons within cylinders. It would have been an obvious matter of design choice to make these ball bearings pistons, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (see MPEP 2144.04 IV. B - Changes in Shape)

Wahlmark discloses the claimed invention except for at least one of the hold-down pistons has a diameter that is smaller than another of the hold-down pistons. It would have been an obvious matter of design choice to make the hold-down pistons different diameters in order to have them distribute more or less pressure to the system, for the purposes of balancing, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (see MPEP 2144.04 IV. A - Changes in Size)

However, Wahlmark does not teach the following claimed limitations taught by Forster.

Forster (Figs. 2 and 3) teaches an adjustable axial piston machine having a bent axis design comprising a back plate 9 having first and second fluid ports 21 configured to be differentially pressurized and a valve plate 6. Forster further teaches a plurality of

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hold-down ball pistons 15 positioned in respective hold-down cylinders 17 formed in the valve plate 6, each of the hold-down ball pistons 15 configured to be biased, by pressurized fluid in the respective hold-down cylinder 17, so as to press the valve plate 6 against a surface 8 of the back plate 9 (see col. 4, lines 50-58). Forster also teaches that the plurality of hold down pistons 15 is distributed along first and second edges of a same surface of the valve plate (see 15 in Figs. 2 and 3); wherein a central axis of hold-down cylinder 17 formed in a first side of the valve plate 6 lie in a first plane that is substantially perpendicular to the surface of the valve plate 6, and a central axis of hold-down cylinder 17 formed in a second side of the valve plate 6 lie in a second plane that is substantially perpendicular to the surface of the valve plate 6 and parallel to the first plane. Forster further teaches that at least one of the hold down pistons 15 distributed along the first edge of the valve plate 6 is in fluid communication with the first fluid feed channel 21 (through 20) and at least one of the hold-down pistons 15 distributed along the second edge of the valve plate is in fluid communication with the second fluid feed channel (see Fig. 3). Forster also teaches that each of the plurality of hold-down pistons 16 comprises an aperture passing along a central axis from a first surface to a second surface thereof (see pistons in Fig. 4); wherein the hold-down pistons (piston rods 16) comprise a fluid passage extending along a central axis thereof from a cylinder end to a face of the respective pistons.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pump of Wahlmark by implementing a pressurized fluid distribution system which feeds fluid from two different fluid feed

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channels to the pistons in order to keep the valve plate slidingly balanced as well as allow for the option to pressurize the pistons on either side of the valve plate different amounts.

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahlmark 3,233,555.

Wahlmark discloses the invention as discussed above. In reference to the last paragraph of claim 23: while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function, because apparatus claims cover what a device is, not what a device does (*Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990)). Thus, if a prior art structure is capable of performing the intended use as recited in the preamble, or elsewhere in a claim, then it meets the claim.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahlmark 3,233,555 in view of Schauer 3,382,813.

Wahlmark discloses the invention as discussed above. However, Wahlmark does not specifically teach a method of coupling a first pressurized fluid source to a rotatable barrel via a first fluid feed channel in a valve plate and a first fluid port in a back plate; coupling a second pressurized fluid source to the rotatable barrel via a second fluid feed channel in the valve plate and a second fluid port in the back plate.

Schauer teaches a hydraulic pump or motor comprising a rotatable barrel 25 and a valve plate 35 within a back plate 13. Schauer further teaches a method of coupling a



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first pressurized fluid source to a rotatable barrel 25 via a first fluid feed channel 80 (Fig. 2) in a valve plate 35 and a first fluid port 80 (Fig. 3) in a back plate 13; coupling a second pressurized fluid source to the rotatable barrel via a second fluid feed channel 81 (Fig. 2) in the valve plate 35 and a second fluid port in the back plate 81 (Fig. 3) (see col. 4, lines 32-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pump of Wahlmark by specifically teaching a method concerning the coupling of various pressurized fluid sources to a rotatable barrel so as to accommodate the direction of rotation of the barrel (Schauer, col. 4, lines 32-38).

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahlmark 3,233,555 in view of Schauer 3,382,813, and in further view of Forster 4,893,549.

Wahlmark in view of Schauer discloses the invention as discussed above. However, Wahlmark in view of Schauer does not teach the following claimed limitations taught by Forster.

Forster (Figs. 2 and 3) teaches an adjustable axial piston machine having a bent axis design comprising a back plate 9 having first and second fluid ports 21 configured to be differentially pressurized and a valve plate 6. Forster further teaches a plurality of hold-down ball pistons 15 positioned in respective hold-down cylinders 17 formed in the valve plate 6, each of the hold-down ball pistons 15 configured to be biased, by pressurized fluid in the respective hold-down cylinder 17, so as to press the valve plate

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6 against a surface 8 of the back plate 9 (see col. 4, lines 50-58). Forster further teaches that at least one of the hold down pistons 15 distributed along the first edge of the valve plate 6 is in fluid communication with the first fluid feed channel 21 (through 20) and at least one of the hold-down pistons 15 distributed along the second edge of the valve plate is in fluid communication with the second fluid feed channel (see Fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pump of Wahlmark by implementing a pressurized fluid distribution system which feeds fluid from two different fluid feed channels to the pistons in order to keep the valve plate slidingly balanced as well as allow for the option to pressurize the pistons on either side of the valve plate different amounts.

### ***Response to Arguments***

11. Applicant's arguments filed 10/9/2008 have been fully considered but they are not persuasive.

12. In response to Applicant's arguments with respect to claim 8: Applicant argues: *"Wahlmark fails to anticipate first and second reaction plates ..., each having a convex reaction surface whose shape and position defines a respective section of a second cylinder. As this language makes clear, the reaction surfaces each define a respective portion of a same cylinder."* Examiner respectfully disagrees. Examiner maintains that the concave arcuate track 69 does indeed curve around to face the back plate's concave surface. Also, the concave surface of 26, seen best in Fig. 2, most certainly reads on the broad limitation of *"having a concave surface whose shape defines a section a first cylinder."* The curved surface of 26 is in the shape of a curved side of a cylinder. As for the convex reaction

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surface *"whose shape and position defines a respective section of a second cylinder"*; surface 64 is curved to match the curved surface of 26; therefore, it is in the shape of a section of a cylinder, due to it being curved like the side of a cylinder, and is obviously concentric to back plate 26.

Furthermore, the term "facing" and the phrase *"surface whose shape defines a section of a cylinder"* are both sufficiently broad. A surface does not need to be parallel with a second surface in order to "face" it; a surface which is angled to a second surface can still be considered as "facing" it. Also, many elements shape could be considered to *"define a section of a cylinder"* because a cylinder has many "sections" making this limitation extremely broad. Thus, the prior art of Wahlmark reads on the claim.

13. In response to Applicant's arguments with respect to claim 18: Applicant argues that it would not have been obvious to make the hold down pistons different diameters. Examiner respectfully disagrees. As stated previously, making the pistons different diameters allows them to distribute more or less pressure to the system. This would be necessary if the torque imparted to the port plate needed to be counteracted in incremental amounts, or by different amounts depending on the point in the pump cycle. Therefore, Examiner maintains that it would be an obvious matter of design choice.

14. In response to Applicant's arguments with respect to claim 3: Applicant argues that Wahlmark in view of Forster does not teach *"a plurality of hold-down pistons distributed along first and second edges of a same surface of the valve plate in respective hold-down cylinders formed in the valve plate."* Examiner respectfully disagrees. The ball bearings in Wahlmark are indeed distributed along first and second edges of a same surface of the

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valve plate in respective spherical casings formed in the valve plate. In light of the obviousness statement made in reference to Wahlmark in combination with the teachings of Forster this limitation is most certainly satisfied.

15. In response to Applicant's arguments with respect to claim 10: Applicant argues that *"Wahlmark cannot teach or suggest biasing a hold-down piston along an axis lying normal to the arc, because this would be exactly perpendicular to the torque applied to its port plate, for which it provides the ball bearings."* Examiner respectfully disagrees. With respect to the obviousness statement made in reference to Wahlmark (it being an obvious matter of design choice to make the ball bearings pistons, since such a modification would have involved a mere change in the shape of a component): Wahlmark does indeed teach that the "hold-down pistons", or ball bearing in this case, would be biased along an axis lying normal to the arc (see how the ball bearing 63 is positioned normal to the arc in Fig. 2). Thus the combination of references reads on the claims.

#### ***Allowable Subject Matter***

16. Claims 1, 2, 7, 19, 20, and 24 are allowed.

17. Claims 5, 13, 14, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER J. BERTHEAUD whose telephone number is (571)272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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